

Appl. No. : 09/836,674
Filed : April 16, 2001

REMARKS

Applicants respectfully request the Examiner to reconsider the above-captioned application in view of the above amendments and the following remarks.

Claim Rejections

Claim 1 and 35 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claim 1 stands rejected 35 U.S.C. 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-18 and 22-25 stand rejected under 35 U.S.C. 102(b) as being anticipated by Suntola (U.S. Patent No. 6,015,590). Claims 19-21 and 35 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Suntola in view of Soininen et al (U.S. 5,855,680). Claim 26 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Suntola in view of Mochizuki et al (U.S. Patent No. 5,166,092).

Applicants respectfully traverse the rejection of these claims. Nevertheless, to advance prosecution, Applicants have chosen to amend independent Claims 1 and 20. Applicants reserve the right to pursue these claims in their original or similar form in a continuing application.

As amended, Claim 1 recites, a “method for growing a thin film on a surface of a substrate in a reaction chamber ~~having a single substrate~~ according to the ALD method, said method comprising: providing a first conduit for delivering a pulse of a first vapor phase reactant and a second conduit for delivering a pulse of a second vapor phase reactant to said reaction chamber; providing at least a first substrate and a second substrate in said reaction chamber, said first substrate being positioned downstream of a point in the reaction chamber where both said first and said second phase reactants have entered the reaction chamber and said first substrate upstream of said second substrate; feeding [[a]] the pulse of [[a]] the first vapor phase reactant exclusively into said reaction chamber and over the first substrate and subsequently over the second substrate; reacting the first vapor phase reactant with said surface of said ~~single-first~~ substrate and subsequently with a surface of said second substrate to form a thin film on said first and second substrates, wherein residual first vapor phase reactant remains in said reaction chamber; and feeding a pulse of a second vapor phase reactant ~~exclusively~~ into said reaction chamber, wherein said

second vapor phase reactant reacts with said residual first vapor phase reactant to form a solid reaction product in said reaction chamber on said first substrate and said second vapor phase reactant subsequently reacts with said surface of said second substrate.”

In contrast, Suntola discloses a reactor with “in-parallel stacked reaction chambers 13.” Col. 9, lines 24-25. Claim 1, as amended, recites in part “a first substrate and a second substrate in said reaction chamber, said first substrate being positioned downstream a point in the reaction chamber where both said first and said second phase reactants have entered the reaction chamber and upstream of said second substrate.” As such, Suntola does not disclose a method for growing a thin film on a substrate as recited in Claim 1. For at least this reason, Applicants respectfully submit that Claim 1 is in condition for allowance. Claims 2-19 and 21-28 depend upon allowable Claim 1 and for, at least this reason, are also in condition for allowance.

Applicants respectfully submit that the Amendments to Claim 1 also address the rejections under 35 U.S.C. 112.

With respect to Claim 20, as amended, this claim recites a “method for growing a thin film on a surface of a substrate in a reaction chamber according to the ALD method, said method comprising: feeding a pulse of a first vapor phase reactant into said reaction chamber; reacting the first vapor phase reactant with said surface of said substrate to form a thin film on said substrate, wherein residual first vapor phase reactant remains in said reaction chamber; and feeding a pulse of a second vapor phase reactant into said reaction chamber, wherein said second vapor phase reactant reacts with said residual first vapor phase reactant to form a solid reaction product in said reaction chamber; and wherein the reaction product is deposited on a medium positioned upstream of said substrate and downstream of a point where both the first and second vapor phase reactants have entered the reaction chamber ~~discardable substrate.~~”

Applicant respectfully submits that the combination Suntola et al. and Soininen does not suggest or teach a method for growing films with all of the above-noted limitations. For at least this reason, Applicant submits that Claim 20 is in condition for allowance.

Please note that Claims 14, 15 and 35 have been canceled.

Appl. No. : 09/836,674
Filed : April 16, 2001

New Claim 36

Applicants have added new Claim 36. Applicants respectfully submit that this claim is also in condition for allowance.

Request for Continued Examination

Applicants note that this Amendment is being filed with a Request for Continued Examination.

CONCLUSION


For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. Accordingly, early issuance of a Notice of Allowance is most earnestly solicited.

The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicants' attorney in order to resolve such issue promptly.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: January 20, 2004

By: 
Rabinder N. Narula
Registration No. 53,371
Attorney of Record
2040 Main Street
Fourteenth Floor
Irvine, CA 92614
(949) 760-0404

H:\DOCS\RNN\RNN-7696.DOC
012004